# SONY

# Digital Still Camera

Instruction Manual













# English

#### Owner's Record

The model and serial numbers are located on the bottom. Record the serial number in the space provided below. Refer to these numbers whenever you call your Sony dealer regarding this product.

Model No.	DSC-WX30	
Serial No.		
Model No.	AC-UB10/UB10B	
C . 1 N		

## WARNING

To reduce fire or shock hazard, do not expose the unit to rain or moisture.

# IMPORTANT SAFETY INSTRUCTIONS -SAVE THESE INSTRUCTIONS DANGER TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, CAREFULLY FOLLOW THESE INSTRUCTIONS

If the shape of the plug does not fit the power outlet, use an attachment plug adaptor of the proper configuration for the power outlet.

#### CAUTION

#### Battery pack

If the battery pack is mishandled, the battery pack can burst, cause a fire or even chemical burns. Observe the following cautions.

- · Do not disassemble.
- Do not crush and do not expose the battery pack to any shock or force such as hammering, dropping or stepping on it.
- Do not short circuit and do not allow metal objects to come into contact with the battery terminals.
- Do not expose to high temperature above  $60^{\circ}\text{C}$  ( $140^{\circ}\text{F}$ ) such as in direct sunlight or in a car parked in the sun.
- 9 Do not incinerate or dispose of in fire.

- · Do not handle damaged or leaking lithium ion batteries.
- Be sure to charge the battery pack using a genuine Sony battery charger or a device that can charge the battery pack.
- · Keep the battery pack out of the reach of small children.
- · Keep the battery pack dry.
- · Replace only with the same or equivalent type recommended by Sony.
- · Dispose of used battery packs promptly as described in the instructions.

#### AC Adaptor

Connect the AC Adaptor to the nearest wall outlet (wall socket).

If some trouble occurs while using the AC Adaptor, immediately shut off the power by disconnecting the plug from the wall outlet (wall socket).

The power cord (mains lead), if supplied, is designed specifically for use with this camera only, and should not be used with other electrical equipment.

# For Customers in Europe

#### Notice for the customers in the countries applying EU Directives

The manufacturer of this product is Sony Corporation, 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan. The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany. For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

This product has been tested and found compliant with the limits set out in the EMC Directive for using connection cables shorter than 3 meters (9.8 feet).

#### Attention

The electromagnetic fields at the specific frequencies may influence the picture and sound of this unit.

#### Notice

If static electricity or electromagnetism causes data transfer to discontinue midway (fail), restart the application or disconnect and connect the communication cable (USB, etc.) again.

# Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)



This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product,

please contact your local Civic Office, your household waste disposal service or the shop where you purchased the product.

# Disposal of waste batteries (applicable in the European Union and other European countries with separate collection systems)



This symbol on the battery or on the packaging indicates that the battery provided with this product shall not be treated as household waste. On certain batteries this symbol might be used in combination with a chemical symbol. The chemical symbols for mercury (Hg) or lead (Pb) are added if the battery contains more than 0.0005% mercury or 0.004% lead. By ensuring these batteries are disposed of correctly, you will help prevent

potentially negative consequences for the environment and human health which could otherwise be caused by inappropriate waste handling of the battery. The recycling of the materials will help to conserve natural resources.

In case of products that for safety, performance or data integrity reasons require a permanent connection with an incorporated battery, this battery should be replaced by qualified service staff only. To ensure that the battery will be treated properly, hand over the product at end-of-life to the applicable collection point for the recycling of electrical and electronic equipment.

For all other batteries, please view the section on how to remove the battery from the product safely.

Hand the battery over to the applicable collection point for the recycling of waste batteries. For more detailed information about recycling of this product or battery, please contact your local Civic Office, your household waste disposal service or the shop where you purchased the product.

# Notice for customers in the United Kingdom

A moulded plug complying with BS 1363 is fitted to this equipment for your safety and convenience.

Should the fuse in the plug supplied need to be replaced, a fuse of the same rating as the supplied one and approved by ASTA or BSI to BS 1362, (i.e., marked with an p or p mark) must be used.

If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

# Refer to "Cyber-shot User Guide" (HTML) on supplied CD-ROM

For details on advanced operations, please read "Cyber-shot User Guide" (HTML) on the CD-ROM (supplied) using a computer.



Insert the CD-ROM into the CD-ROM drive.

#### For Windows users:

- Click [User Guide] → [Install].
- 2 Start "User Guide" from the shortcut on the desktop.

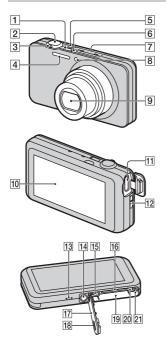
#### For Macintosh users:

- Select the [User Guide] folder and copy [eng] folder stored in [User Guide] folder to your computer.
- 2 After copying is complete, double-click "index.html" in [eng] folder.

# Checking the supplied items

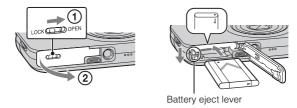
- Camera (1)
- Rechargeable battery pack NP-BN (1)
   (This rechargeable battery pack cannot be used with Cyber-shot that are supplied with the NP-BN1 battery pack.)
- Multi-use terminal USB cable (1)
- AC Adaptor AC-UB10/UB10B (1)
- Power cord (mains lead) (not supplied in the USA and Canada) (1)
- Paint pen (1)
- Wrist strap (1)
- CD-ROM (1)
  - Cyber-shot application software
  - "Cyber-shot User Guide"
- Instruction Manual (this manual) (1)

# **Identifying parts**



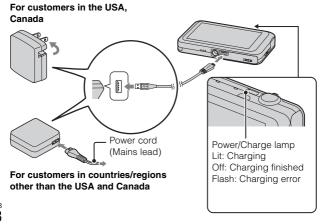
- 1 ON/OFF (Power) button
- 2 Shutter button
- 3 W/T (Zoom) lever
- 4 Flash
- [5] (Playback) button
- 6 Power/Charge lamp
- 7 Microphone
- 8 Self-timer lamp/Smile Shutter lamp/AF illuminator
- 9 Lens
- 10 Screen/Touch panel
- 11 HDMI connector
- 12 Hook for wrist strap
- 13 Speaker
- 14 Tripod receptacle
  - Use a tripod with a screw less than 5.5 mm (7/32 inches) long. Otherwise, you cannot firmly secure the camera, and damage to the camera may occur.
- 15 Multi connector (Type3b)
- 16 Memory card slot
- 17 **▼** (TransferJet<sup>TM</sup>) mark
- 18 Battery/memory card cover
- 19 Battery insertion slot
- 20 Access lamp
- 21 Battery eject lever

# Inserting the battery pack



- 1 Open the cover.
- 2 Insert the battery pack.
  - While pressing down the battery eject lever, insert the battery pack as illustrated. Make sure that the battery eject lever locks after insertion.
  - Closing the cover with the battery inserted incorrectly may damage the camera.

# Charging the battery pack



- 1 Connect the camera to the AC Adaptor (supplied), using the multi-use terminal USB cable (supplied).
- 2 Connect the AC Adaptor to the wall outlet (wall socket).

The Power/Charge lamp lights orange, and charging starts.

- · Turn off the camera while charging the battery.
- You can charge the battery pack even when it is partially charged.
- When the Power/Charge lamp flashes and charging is not finished, remove and re-insert the battery pack.

#### Notes

- When the Power/Charge lamp on the camera does not lit even if the AC Adaptor is connected to the camera and the wall outlet (wall socket), it indicates that the charging stops temporarily on standby. Charging stops and enters into standby mode automatically when the temperature is outside of the recommended operating temperature. When the temperature gets back within the appropriate range, the charging resumes. We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F).
- Connect the AC Adaptor (supplied) to the nearest wall outlet (wall socket). If
  malfunctions occur while using the AC Adaptor, disconnect the plug from the wall
  outlet (wall socket) immediately to disconnect from the power source.
- When charging is finished, disconnect the AC Adaptor from the wall outlet (wall socket).
- Be sure to use only genuine Sony brand battery packs, multi-use terminal USB cable (supplied) and AC Adaptor (supplied).

#### Charging time

The charging time is approximately 210 min. using the AC Adaptor (supplied).

#### Note

 The above charging time applies when charging a fully depleted battery pack at a temperature of 25°C (77°F). Charging may take longer depending on conditions of use and circumstances.

# Charging by connecting to a computer

The battery pack can be charged by connecting the camera to a computer using a multi-use terminal USB cable.



#### Note

- Note the following points when charging via a computer:
  - If the camera is connected to a laptop computer that is not connected to a power source, the laptop battery level decreases. Do not charge for an extended period of time.
  - Do not turn on/off or restart the computer, or wake the computer to resume from sleep mode when a USB connection has been established between the computer and the camera. The camera may cause a malfunction. Before turning on/off, or restarting the computer or waking the computer from sleep mode, disconnect the camera and the computer.
  - No guarantees are made for charging using a custom-built computer or a modified computer.

# Battery life and number of images can be recorded and played back

	Battery life	Number of images
Shooting (still images)	Approx. 115 min.	Approx. 230 images
Viewing (still images)	Approx. 180 min.	Approx. 3600 images
Shooting (movies)	Approx. 55 min.	_

#### Notes

- The above number of images applies when the battery pack is fully charged. The number of images may decrease depending on the conditions of use.
- The number of images that can be recorded is for shooting under the following conditions:
- Using Sony "Memory Stick PRO Duo" (Mark2) media (sold separately)
- The battery pack is used at an ambient temperature of 25°C (77°F).

- The number for "Shooting (still images)" is based on the CIPA standard, and is for shooting under the following conditions:
  - (CIPA: Camera & Imaging Products Association)
  - [Panel Brightness] is set to [3].
  - Shooting once every 30 seconds.
  - The zoom is switched alternately between the W and T ends.
  - The flash strobes once every two times.
  - The power turns on and off once every ten times.
- The battery life for movies applies shooting under the following conditions:
  - Movie quality: AVC HD HQ
  - When continuous shooting ends because of set limits (page 20), touch
     (Movie button) again and continue shooting. Shooting functions such as the zoom do not operate.

# ■ Supplying power

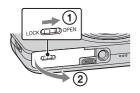
The camera can be supplied with power from the wall outlet (wall socket) by connecting to the AC Adaptor, using the multi-use terminal USB cable (supplied).

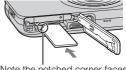
You can import images to a computer without worrying about draining the battery pack by connecting the camera to a computer using the multi-use terminal USB cable.

#### Notes

- Power cannot be supplied when the battery pack is not inserted in the camera.
- Power supply from the wall outlet (wall socket) is available only when the camera is in playback mode or when a connection is made between the camera and a computer. If the camera is in shooting mode or while you are changing the settings of the camera, power is not supplied even if you make a USB connection using the multi-use terminal USB cable.
- If you connect the camera and a computer using the multi-use terminal USB cable
  while the camera is in playback mode, the display on the camera will change from
  the playback screen to the USB connection screen. Press (Playback) button to
  switch to the playback screen.

# Inserting a memory card (sold separately)





Note the notched corner faces correctly.

- 1 Open the cover.
- 2 Insert the memory card (sold separately).
  - With the notched corner facing as illustrated, insert the memory card until it clicks into place.
- 3 Close the cover.

## Memory cards that can be used

	Memory card	For still images	For movies
	Memory Stick PRO Duo	0	O (Mark2 only)
Α	Memory Stick PRO-HG Duo	0	0
	Memory Stick Duo	0	_
	SD memory card	0	O (Class 4 or faster)
В	SDHC memory card	0	O (Class 4 or faster)
	SDXC memory card	0	O (Class 4 or faster)

 In this manual, products in A are collectively referred to as "Memory Stick Duo" media, and products in B are collectively referred to as SD card.

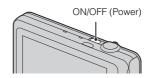
# ■ To remove the memory card/battery pack

Memory card: Push the memory card in once to eject the memory card. Battery pack: Slide the battery eject lever. Be sure not to drop the battery pack.

#### Note

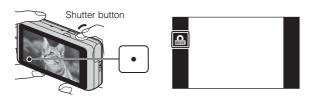
Never remove the memory card/battery pack when the access lamp (page 7) is lit.
 This may cause damage to data in the memory card/internal memory.

# Setting the clock



- 1 Press the ON/OFF (Power) button.
  - Date & Time setting is displayed when you turn on the camera for the first time.
  - It may take time for the power to turn on and allow operation.
- 2 Select a desired language.
- 3 Select a desired geographic location by following the on-screen instructions, then touch [Next].
- 4 Set [Daylight Savings] or [Summer Time], [Date & Time Format] and [Date & Time], then touch [Next].
  - Midnight is indicated as 12:00 AM, and noon as 12:00 PM.
- 5 Touch [OK].
- 6 Select the desired display color, following the instructions on the screen, then touch [OK].
- 7 When an [In-Camera Guide] introductory message is appeared on the screen, touch [OK].

# Shooting still images/movies



#### Shooting still images

- 1 Press the shutter button halfway down to focus. When the image is in focus, a beep sounds and the indicator lights.
- 2 Press the shutter button fully down to shoot an image.

#### **Shooting movies**

- Touch 🔝 (Movie button) to start recording.
  - Use the W/T (zoom) lever to change the zoom scale.
- 2 Touch 🚨 (Movie button) to stop recording.

#### Notes

- The sound of the lens and lever operating will be recorded when the zoom function operates while shooting a movie.
- Continuous shooting is possible for approximately 29 minutes at one time at the camera's default settings and when the temperature is approximately 25°C (77°F). When movie recording is finished, you can restart recording by touching (Movie button) again. Recording may stop to protect the camera depending on the ambient temperature.

# Viewing images





- 1 Press the (Playback) button.
  - When images on a memory card recorded with other cameras are played back on this camera, the registration screen for the data file appears.

#### ■ Selecting next/previous image

- To play back movies, touch ( ) (Playback) in the center of the screen.
- · To zoom in, touch the still image being played back.

#### ■ Deleting an image

Touch m (Delete) → [This Image].

# Returning to shooting images

Touch on the screen.

 You can also return to shooting mode by pressing the shutter button halfway down.

#### **In-Camera Guide**

This camera is equipped with built-in instruction guide. This allows you to search the camera's functions according to your needs.





- 1 Touch ? (In-Camera Guide).
  - The ? mark will appear on the bottom left of the screen while viewing.
- 2 Select a search method from [In-Camera Guide]. Shoot/ playback guide: Search for various operation functions in shooting/viewing mode.

Icon guide: Search the function and meaning of displayed icons.

Troubleshooting: Search common problems and their solution.

Objective guide: Search functions according to your needs.

Keyword: Search functions by keywords.

History: View the last 10 items displayed in [In-Camera Guide].

## Introduction of other functions

Other functions used when shooting or playing back can be operated touching the MENU on the screen. This camera is equipped with a Function Guide that allows you to easily select from the functions. While displaying the guide, you can use various functions.



#### **■ Menu Items**

#### **Shooting**

Movie shooting scene	Select movie recording mode.
Easy Mode	Shoot still images using minimal functions.
Movie button	Shoots movies from all shooting modes quickly.
Flash	Sets the flash settings.
Self-Timer	Sets the self-timer settings.
Defocus Effect	Set the level of background defocus effect when shooting in Background Defocus mode.
Still Image Size(Dual Rec)	Sets the still image size shot while recording a movie.
Still Image Size/ Panorama Image Size/Movie Size/ Movie Quality	Select the image size and the quality for still images, panoramic images or movie files.
Cont. Shooting Settings	Sets the burst shooting settings.
HDR Painting effect	When [HDR Painting] is selected in Picture Effect, sets the effect level.
Area of emphasis	When [Miniature] is selected in Picture Effect, sets the part to focus on.

Color hue	When [Toy camera] is selected in Picture Effect, sets the color hue.
Extracted Color	When [Partial Color] is selected in Picture Effect, selects the color to extract.
EV	Adjust the exposure manually.
ISO	Adjust the luminous sensitivity.
White Balance	Adjust color tones of an image.
Focus	Select the focus method.
Metering Mode	Select the metering mode that sets which part of the subject to measure to determine the exposure.
Scene Recognition	Set to automatically detect shooting conditions.
Soft Skin Effect	Set the Soft Skin Effect and the effect level.
Smile Shutter	Set to automatically release the shutter when a smile is detected.
Smile Detection Sensitivity	Set the Smile Shutter function sensitivity for detecting smiles.
Face Detection	Select to detect faces and adjust various settings automatically.
Anti Blink	Set to automatically shoot two images and select image in which the eyes are not blinking.
Movie SteadyShot	Sets the strength of SteadyShot in movie mode.
In-Camera Guide	Search the camera's functions according to your needs.

# Viewing

Easy Mode	Increase the text size on the screen for ease of use.	
Date Select	Selects the desired image to view by date.	
Calendar	Selects the date to be played back on Calendar.	
Image Index	Displays multiple images at the same time.	
Slideshow	Select a method of continuous playback.	
Delete	Delete an image.	
Send by TransferJet	Transfer data by closely aligning two products equipped with TransferJet.	

Paint	Paints on a still image and saves it as a new file.
Retouch	Retouch an image using various effects.
3D Viewing	Set to play back images shot in 3D mode on a 3D TV.
View Mode	Select the display format for images.
Display Cont. Shooting Group	Select to display burst images in groups or display all images during playback.
Protect	Protect the images.
Print (DPOF)	Add a print order mark to a still image.
Rotate	Rotate a still image to the left or right.
Volume	Adjusts the volume.
Exposure data	Sets whether or not to display the shooting data (Exif data) of the currently displayed file on the screen.
Number of images in index	Sets the number of images displayed in the index screen.
In-Camera Guide	Search the camera's functions according to your needs.

# Setting items

If you touch the MENU while shooting or during playback, 🚘 (Settings) is provided as a final selection. You can change the default settings on the (Settings) screen.

ি Shooting Settings	Movie format/AF Illuminator/Grid Line/Clear Image Zoom/Digital Zoom/Wind Noise Reduct./Scene Recog. Guide/Red Eye Reduction/Blink Alert/Write Date
ุช <b>T</b> Main Settings	Beep/Histogram Setting/Panel Brightness/Language Setting/Display color/Demo Mode/Initialize/CTRL FOR HDMI/USB Connect Setting/USB Power Supply/LUN Setting/Download Music/Empty Music/TransferJet/Eye-Fi/Power Save/Calibration
Memory Card Tool*	Format/Create REC.Folder/Change REC.Folder/Delete REC.Folder/Copy/File Number
Olock Settings	Area Setting/Date & Time Setting

<sup>\*</sup> If a memory card is not inserted, (Internal Memory Tool) will be displayed and GB only [Format] can be selected.

# Number of still images and recordable time of movies

The number of still images and recordable time may vary depending on the shooting conditions and the memory card.

#### ■ Still images

(Units: Images)

Capacity	Internal memory	Memory card
Size	Approx. 19 MB	2 GB
16M	3	335
VGA	98	9600
16:9(12M)	3	355

#### Movies

The table below shows the approximate maximum recording times. These are the total times for all movie files. Continuous shooting is possible for approximately 29 minutes. The maximum size of an MP4-format movie file is up to approximately 2 GB.

(h (hour), m (minute))

Capacity	Internal memory	Memory card
Size	Approx. 19 MB	2 GB
AVC HD 24M (FX)	_	10 m (10 m)
AVC HD 9M (HQ)	_	25 m (15 m)
MP4 12M	_	15 m
MP4 3M	_	1 h 10 m

The number in ( ) is the minimum recordable time.

 The recordable time of movies varies because the camera is equipped with VBR (Variable Bit Rate), which automatically adjusts image quality depending on the shooting scene. When you record a fast-moving subject, the image is clearer but the recordable time is shorter because more memory is required for recording.
 The recordable time also varies depending on the shooting conditions, the subject or the image quality/size settings.

# Notes on using the camera

#### Functions built into this camera

 This manual describes each of the functions of TransferJet compatible/ incompatible devices, 1080 60i-compatible devices and 1080 50i-compatible devices.

To check if your camera supports the TransferJet function, and whether it is a 1080 60i-compatible device or 1080 50i-compatible device, check for the following marks on the bottom of the camera.

TransferJet-compatible device: **▼** (TransferJet)

1080 60i-compatible device: 60i

1080 50i-compatible device: 50i

- Do not watch 3D images shot with this camera for extended periods of time on 3D-compliant monitors.
- When you view 3D images shot with this camera on a 3D-compliant monitors, you may experience discomfort in the form of eye strain, fatigue, or nausea. To prevent these symptoms, we recommend that you take regular breaks. However, you need to determine for yourself the length and frequency of breaks you require, as they vary according to the individual. If you experience any type of discomfort, stop viewing the 3D images until you feel better, and consult a physician as necessary. Also refer to the operating instructions supplied with the device or software you have connected or are using with this camera. Note that a child's eyesight is still at the development stage (particularly children below the age of 6).

Consult a pediatrician or ophthalmologist before letting your child view 3D images, and make sure he/she observes the above precautions when viewing such images.

#### On use and care

Avoid rough handling, disassembling, modifying, physical shock, or impact such as hammering, dropping, or stepping on the product. Be particularly careful of the lens.

#### Notes on recording/playback

- Before you start recording, make a trial recording to make sure that the camera is working correctly.
- The camera is neither dust-proof, nor splash-proof, nor water-proof.
- Avoid exposing the camera to water. If water enters inside the camera, a malfunction may occur. In some cases, the camera cannot be repaired.
- Do not aim the camera at the sun or other bright light. It may cause the malfunction of the camera.
- If moisture condensation occurs, remove it before using the camera.
- Do not shake or strike the camera. It may cause a malfunction and you may not be
  able to record images. Furthermore, the recording media may become unusable or
  image data may be damaged.

#### Do not use/store the camera in the following places

- In an extremely hot, cold or humid place
   In places such as in a car parked in the sun, the camera body may become deformed and this may cause a malfunction.
- Under direct sunlight or near a heater
   The camera body may become discolored or deformed, and this may cause a malfunction
- · In a location subject to rocking vibration
- Near a location that generates strong radio waves, emits radiation or is strongly
  magnetic place. Otherwise, the camera may not properly record or play back
  images.
- In sandy or dusty places
   Be careful not to let sand or dust get into the camera. This may cause the camera to malfunction, and in some cases this malfunction cannot be repaired.

#### On carrying

Do not sit down in a chair or other place with the camera in the back pocket of your trousers or skirt, as this may cause malfunction or damage the camera.

#### Carl Zeiss lens

The camera is equipped with a Carl Zeiss lens which is capable of reproducing sharp images with excellent contrast. The lens for the camera has been produced under a quality assurance system certified by Carl Zeiss in accordance with the quality standards of Carl Zeiss in Germany.

#### Note on the screen and lens

The screen is manufactured using extremely high-precision technology so over 99.99% of the pixels are operational for effective use. However, some tiny black and/or bright dots (white, red, blue or green) may appear on the screen. These dots are a normal result of the manufacturing process, and do not affect the recording.

#### On camera's temperature

Your camera and battery may get hot due to continuous use, but it is not a malfunction.

#### On the overheat protection

Depending on the camera and battery temperature, you may be unable to record movies or the power may turn off automatically to protect the camera.

A message will be displayed on the screen before the power turns off or you can no longer record movies. In this case, leave the power off and wait until the camera and battery temperature goes down. If you turn on the power without letting the camera and battery cool enough, the power may turn off again or you may be unable to record movies.

#### On charging the battery

If you charge a battery that has not been used for a long time, you may be unable to charge it to the proper capacity.

This is due to the battery characteristics, and is not a malfunction. Charge the battery again.

#### Warning on copyright

Television programs, films, videotapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provisions of the copyright laws.

#### No compensation for damaged content or recording failure

Sony cannot compensate for failure to record or loss or damage of recorded content due to a malfunction of the camera or recording media, etc.

#### Cleaning the camera surface

Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface with a dry cloth. To prevent damage to the finish or casing:

 Do not expose the camera to chemical products such as thinner, benzine, alcohol, disposable cloths, insect repellent, sunscreen or insecticide.

# **Specifications**

#### Camera

#### [System]

Image device: 7.77 mm (1/2.3 type) Exmor R CMOS sensor

Total pixel number of camera: Approx. 16.8 Megapixels

Effective pixel number of camera: Approx. 16.2 Megapixels

Lens: Carl Zeiss Vario-Tessar 5× zoom lens

> f = 4.5 mm - 22.5 mm (25 mm -125 mm (35 mm film equivalent)) F2.6 (W) - F6.3 (T)

While shooting movies (16:9):

29 mm - 145 mm\*

While shooting movies (4:3):

36 mm - 180 mm\*

\* When [Movie SteadyShot] is set to [Standard]

SteadyShot: Optical

Exposure control: Automatic exposure, Scene Selection (14 modes)

White balance: Automatic, Daylight, Cloudy, Fluorescent 1/2/3, Incandescent, Flash, One Push Signal format:

For 1080 50i: PAL color, CCIR standards HDTV 1080/50i specification

For 1080 60i: NTSC color, EIA standards HDTV 1080/60i specification

#### File format:

Still images: JPEG (DCF Ver. 2.0, Exif Ver. 2.3, MPF Baseline) compliant, DPOF compatible 3D still images: MPO (MPF Extended (Disparity Image)) compliant Movies (AVCHD format): AVCHD

AVCHD Video: MPEG-4 AVC/H.264

Audio: Dolby Digital 2ch, equipped with Dolby Digital Stereo Creator

 Manufactured under license from Dolby Laboratories.
 Movies (MP4 format):

Movies (MP4 format):

Video: MPEG-4 AVC/H.264 Audio: MPEG-4 AAC-LC 2ch

Recording media: Internal Memory (Approx. 19 MB), "Memory Stick Duo" media, SD cards

Flash: Flash range (ISO speed (Recommended Exposure Index) set to Auto):

Approx. 0.05 m to 5.3 m (2 inches to 17 ft 4 3/4 inches) (W) Approx. 1.0 m to 2.2 m (3 ft 3 3/8 inches to 7 ft 2 5/8 inches) (T)

#### [Input and Output connectors]

HDMI connector: HDMI mini jack Multi connector: Type3b (AV-out/USB/DC-in): Video output

Audio output (Stereo)

USB communication
USB communication: Hi-Speed USB
(USB 2.0)

#### [Screen]

Panel:

Wide (16:9), 7.5 cm (3.0 type) TFT drive

Total number of dots:  $921\ 600\ (1\ 920 \times 480)\ dots$ 

#### [Power, general]

Power: Rechargeable battery pack NP-BN, 3.6 V

AC Adaptor AC-UB10/UB10B, 5 V

Power consumption (during shooting): 1.1 W

Operating temperature: 0 °C to 40 °C (32 °F to 104 °F)

Storage temperature: -20 °C to +60 °C (-4 °F to +140 °F)

Dimensions (CIPA compliant): 92.2 mm × 51.9 mm × 19.1 mm (3 3/4 inches × 2 1/8 inches × 25/32 inches) (W/H/D)

Mass (CIPA compliant) (including NP-BN battery pack, "Memory

Stick Duo" media): Approx. 117 g (4.1 oz)

Approx. 117 g (4.1 oz)
Microphone: Stereo
Speaker: Monaural
Exif Print: Compatible
PRINT Image Matching III:
Compatible

#### AC Adaptor AC-UB10/UB10B

Power requirements: AC 100 V to 240 V, 50 Hz/60 Hz, 70 mA

Output voltage: DC 5 V, 0.5 A Operating temperature: 0 °C to 40 °C (32 °F to 104 °F)

Storage temperature: -20 °C to +60 °C (-4 °F to +140 °F)

Dimensions:

Approx. 50 mm  $\times$  22 mm  $\times$  54 mm (2 inches  $\times$  7/8 inches  $\times$ 2 1/4 inches) (W/H/D)

Mass:

For the USA and Canada: Approx. 48 g (1.7 oz) For countries or regions other than the USA and Canada:

Approx. 43 g (1.5 oz)

# Rechargeable battery pack NP-BN

Used battery: Lithium-ion battery Maximum voltage: DC 4.2 V Nominal voltage: DC 3.6 V

Maximum charge voltage: DC 4.25 V Maximum charge current: 0.9 A Capacity:

typical: 2.3 Wh (630 mAh) minimum: 2.2 Wh (600 mAh)

Design and specifications are subject to change without notice.

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